

# SERVICE MANUAL

## INTEGRATED AMPLIFIER

# SANSUI AU-X501



### CAUTION

1. Parts identified by the  $\Delta$  symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

### •SPECIFICATIONS

#### Power output

Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.005% total harmonic distortion.  
80 watts per channel into 8 ohms.

**Load impedance**..... 4 to 16 ohms

**Total harmonic distortion** less than 0.005% at or below rated min. RMS power output

**Intermodulation distortion** (60 Hz: 7 kHz=4:1 SMPTE method)

..... less than 0.005% at rated power output

#### Frequency response (at 1 watt)

Overall (from CD)..... 1 to 200,000 Hz, +0 dB  
-3 dB

**RIAA curve deviation** (PHONO-MM, 20 Hz to 20 kHz)  
..... +0.2 dB, -0.2 dB

#### Input sensitivity and impedance (at 1 kHz)

PHONO (MC)..... 300  $\mu$ V/100 or 22 ohms

PHONO (MM)..... 2.5 mV/47 kohms

(Max. input capability: 210 mV at 1 kHz, less than 0.01% total harmonic distortion)

CD, TUNER, LINE..... 150 mV/47 kohms

TAPE/DAT PLAY-1, 2 .. 150 mV/47 kohms

#### Output level (at 1 kHz)

TAPE/DAT REC-1, 2 .... 150 mV into 47 kohms

#### Signal to noise ratio (short-circuit, A-network)

PHONO (MC)..... 70 dB

PHONO (MM)..... 83 dB

CD, TUNER, LINE..... 110 dB

TAPE/DAT PLAY-1, 2 .. 110 dB

#### Controls and Filter

BASS .....  $\pm 8$  dB at 100 Hz

TREBLE.....  $\pm 8$  dB at 10 kHz

SUBSONIC..... -3 dB at 16 Hz (6 dB/oct)

LOUDNESS ..... +8 dB at 50 Hz

(VOLUME: -30 dB

position) ..... +6 dB at 10 kHz

**Power requirements**..... AC 120V/220V/240V,  
50/60 Hz

For U.S.A. & Canada .. AC 120V, 60 Hz

**Power consumption** ..... 410 watts 500 VA Rated  
690 watts Maximum

**Dimensions** ..... 448 mm (17-11/16") W  
135 mm (5-3/8") H

370 mm (14-5/8") D

**Weight**..... 10.8 kg (23.8 lbs) net

12.1 kg (26.7 lbs) packed

\* Design and specifications subject to changes without notice for improvements.

\* Due to local laws and regulations, this unit sold in some areas are not equipped with variable voltage selectors.

**Sansui**

SANSUI ELECTRIC CO., LTD.

## NOTE

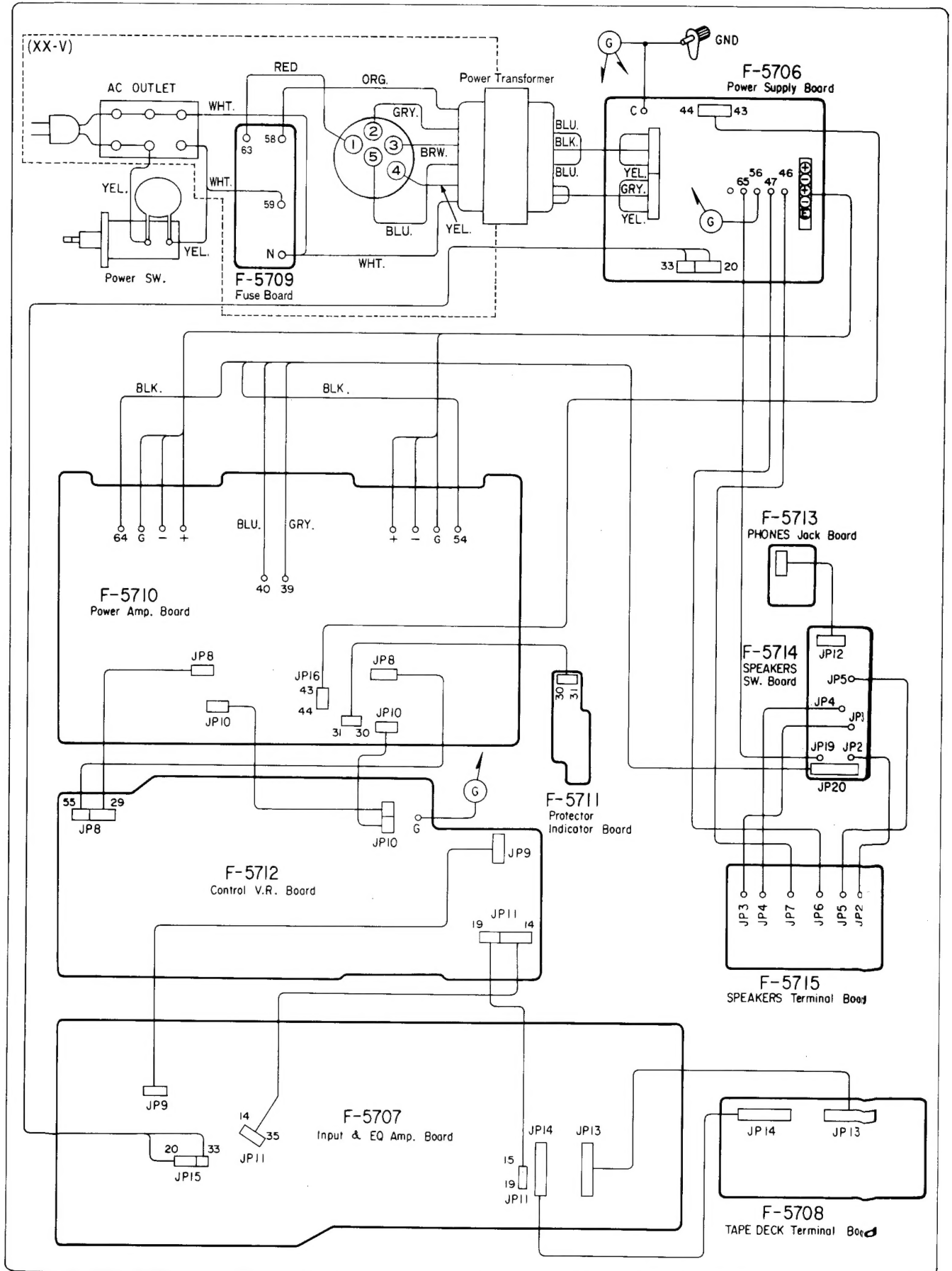
1. The symbols, UL, CSA, SA, BS, UK, EU, AS, SS, XX <EXPORT> and XX-V <EXPORT(V)> on the parts list and the schematic diagram mean followings respectively.

UL.....	Manufactured for U.S.A market. (Underwriters Laboratories approved model.)
CSA .....	Manufactured for Canadian market.
SA.....	Manufactured for South African market.
BS, UK.....	Manufactured for United Kingdom market.
EU .....	Manufactured for European market.
AS.....	Manufactured for Australian market.
SS.....	Manufactured for Saudi Arabia market.
XX <EXPORT> .....	Standard Version with Inner Voltage Selector.
XX-V <EXPORT(V)> ..	Standard Version with Outer Voltage Selector.
NON MARK .....	Common Parts.
2. Some printed circuit boards are not supplied assembled. To separate these in this service manual, the stock numbers are not indicated for these boards. However, stock numbers for individual parts are indicated.
3. Since some capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors and resistors, which was issued on February 1983.
4. Abbreviations in this service manual are as follows.

## •Abbreviations List

C.R. : Carbon Resistor	E.B.L. : Low Leak Bi-Polar
S.R. : Solid Resistor	Electrolytic Capacitor
Ce.R. : Cement Resistor	Ta.C. : Tantalum Capacitor
M.R. : Metal Film Resistor	F.C. : Film Capacitor
F.R. : Fusing Resistor	M.P. : Metalized Paper Capacitor
N.I.R. : Non-Inflammable Resistor	P.C. : Polystyrene Capacitor
A.R. : Array Resistor	G.C. : Gimmic Capacitor
C.C. : Ceramic Capacitor	A.C. : Array Capacitor
C.T. : Ceramic Capacitor,	V.R. : Variable Resistor
Temperature Compensation	S.V.R. : Semi Variable Resistor
E.C. : Electrolytic Capacitor	SW. : Switch
E.L. : Low Leak Electrolytic	Chip R. : Chip Resistor
Capacitor	Chip C. : Chip Capacitor
E.B. : Bi-Polar Electrolytic	
Capacitor	

# 1. WIRING DIAGRAM



## 2. PARTS LIST OF CIRCUIT BOARD

### 2-1. F-5706 Power Supply Board (Stock No. 01040501)

Parts No.	Stock No.	Description
•Transistor		
△mQ1	48061801	2SC3244
△mQ2	48064001	2SA1284
△mQ3	07206301	2SB631K
•Diode		
△mD1	48159900	CTM-22S
△mD2	48159800	CTM-22R
△mD3	46273600	DBB10B
△	or 46273700	DBB10C
•Zener Diode		
mDZ1	46115600	05Z22-X
	or 46115700	05Z22-Y
	or 46115800	05Z22-Z
	or 46829300	RD22E-B1
	or 46829400	RD22E-B2
	or 46829500	RD22E-B3
mDZ2	46115600	05Z22-X
	or 46115700	05Z22-Y
	or 46115800	05Z22-Z
	or 46829300	RD22E-B1
	or 46829400	RD22E-B2
	or 46829500	RD22E-B3
mDZ3	46112600	05Z8.2-X
	or 46112700	05Z8.2-Y
	or 46112800	05Z8.2-Z
	or 46826100	RD8.2E-B1
	or 46826200	RD8.2E-B2
	or 46826300	RD8.2E-B3
△mR1	46231600	15kΩ 1/2W N.I.R.
△mR2	46231600	15kΩ 1/2W N.I.R.
△mR3	46227800	10Ω 1/2W N.I.R.
△mR4	46227800	10Ω 1/2W N.I.R.
△mR8	46227400	4.7Ω 1/2W N.I.R.
△mR9	46227400	4.7Ω 1/2W N.I.R.
△mR10	46909400	220Ω 3W N.I.R.
△mR14	46227400	4.7Ω 1/2W N.I.R.
mC1	48843600	10000μF 71V E.C.
mC2	48843600	10000μF 71V E.C.
mC3	08680400	0.01μF 500V C.C.
mC4	08680400	0.01μF 500V C.C.
mC5	08680400	0.01μF 500V C.C.
mC6	08680400	0.01μF 500V C.C.
mC7	08680400	0.01μF 500V C.C.
mC8	08680400	0.01μF 500V C.C.
mC9	48695300	100μF 50V E.C.
mC10	48695300	100μF 50V E.C.
mC13	48683500	100μF 25V E.C.
mC14	48683500	100μF 25V E.C.

### 2-2. F-5708 TAPE DECK/DAT Terminal Board

Parts No.	Stock No.	Description
oZ3	48528500	4P Terminal, TAPE/DAT
oZ4	48528500	4P Terminal, TAPE/DAT

### 2-3. F-5710 Power Amp. Board (Stock No. 01040901)

Parts No.	Stock No.	Description
•Transistor		
kQ1	46581701	2SC1845
kQ2	46581701	2SC1845
kQ3	46581701	2SC1845
kQ4	46581601	2SA992
kQ5	46581601	2SA992
kQ6	46728201	2SA1145
kQ7	46581701	2SC1845
kQ8	46728301	2SC2705
kQ9	46581701	2SC1845
kQ10	46728301	2SC2705
kQ11	46728201	2SA1145
kQ12	46728901	2SC3298
kQ13	46728801	2SA1306
△kQ14	48844001	2SC3858
△kQ15	48843901	2SA1494
•FET		
kFT1	48583300	μPA68HA-L
	or 48583301	μPA68HA-M
•Diode		
kD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
kD2	03401700	Varistor, MV103
kD3	03401700	Varistor, MV103
•Zener Diode		
kDZ1	46115600	05Z22-X
	or 46115700	05Z22-Y
	or 46115800	05Z22-Z
	46111700	05Z6.2-X
	or 46111800	05Z6.2-Y
	or 46111900	05Z6.2-Z
△kR4	46250900	2.2kΩ 1W N.I.R.
△kR10	46231200	6.8kΩ 1/2W N.I.R.
△kR17	46228800	68Ω 1/2W N.I.R.
△kR25	46228800	68Ω 1/2W N.I.R.
△kR32	46230200	1kΩ 1/2W N.I.R.
△kR33	46229100	120Ω 1/2W N.I.R.
△kR34	46227400	4.7Ω 1/2W N.I.R.
△kR35	46227400	4.7Ω 1/2W N.I.R.
△kR36	46184100	0.22Ω 5WX2 Ce.R.
△kR37	46907400	4.7Ω 3W N.I.R.
kC3	48697600	470μF 80V E.C.
kC7	48697600	470μF 80V E.C.
kC10	48686200	47μF 50V E.C.
kC13	46697600	0.1μF 50V F.C.
kC15	48686200	47μF 50V E.C.
kL1	46851900	Inductor 0.8μH
	or 46851901	0.82μH Filter Coil
kVR1	10350100	100Ω (B) S.V.R., D: ○ V
kVR2	10350700	1kΩ (B) S.V.R., Bia
•Transistor		
IQ1	46581701	2SC1845
IQ2	46581601	2SA992
•IC		
IIC1	46207600	TA7317P
•Diode		
ID1	03117600	1S2473T77
	or 46086000	1S1588TP-3
ID2	03117600	1S2473T77
	or 46086000	1S1588TP-3
ID3	03117600	1S2473T77
	or 46086000	1S1588TP-3

to be continued ►



Parts No.	Stock No.	Description
ID4	03117600 or 46086000	1S2473T77 1S1588TP-3
ID5	48123600	11E2
IR16	46229900	560 $\Omega$ 1/2W N.I.R.
IC6	48104200	220 $\mu$ F 6.3V E.B.
IRL1	46737700	Relay, 24V
•Transistor nQ1 nQ2	46581701 46581701	2SC1845 2SC1845
•Diode nD1	03117600 or 46086000	1S2473T77 1S1588TP-3

## 2-4. F-5707 EQ Amp. & INPUT Terminal Board (Stock No. 01040601)

Parts No.	Stock No.	Description
•IC iIC1 iIC2	46288800 46288800	M5220L M5220L
iC1 iC2 iC5 iC6 iC7 iC8 iC9 iC10 iC11 iC12 iC14	48685900 48685900 48685800 46694700 46693500 46693900 48685900 48685900 48685900 48685900 48688500 46692800	10 $\mu$ F 50V E.C. 10 $\mu$ F 50V E.C. 4.7 $\mu$ F 50V E.C. 6200pF 50V F.C. 2000pF 50V F.C. 3000pF 50V F.C. 10 $\mu$ F 50V E.C. 10 $\mu$ F 50V E.C. 10 $\mu$ F 50V E.C. 10 $\mu$ F 50V E.C. 470 $\mu$ F 6.3V E.C. 1000pF 50V F.C.
•LED nLD2 nLD3 nLD4 nLD5 oS1 oS2 oS3 oZ1 oZ2	48719200 48719200 48719200 48719200 48829200 48640300 07200200 48528400 48528600	AY3427S AY3427S AY3427S AY3427S Push SW., MC/MM•MC LOAD Push SW., INPUT SELECTOR Slide SW., REC SELECTOR 2P Terminal, PHONO 6P Terminal, CD•TUNER•LINE

## 2-5. F-5711 PROTECTOR Indicator Board

Parts No.	Stock No.	Description
•LED nLD1	48719200	AY3427S

## 2-6. F-5713 PHONES Jack Board

Parts No.	Stock No.	Description
oJ1	46579600	Jack,

## 2-7. F-5712 Control V.R. Board

Parts No.	Stock No.	Description
jC1 jC3 jC4 jC5 jC7 jC8 jC9 jC10 jVR1 jVR2 jVR3 jVR4	48103000 46696000 46283600 48103000 46282100 46282900 46282700 46283900 48829400 48829300 48829500 48829500	0.22 $\mu$ F 50V E.B. 0.022 $\mu$ F 50V F.C. 0.039 $\mu$ F 50V F.C. 0.22 $\mu$ F 50V E.B. 1800pF 50V F.C. 0.01 $\mu$ F 50V F.C. 6800pF 50V F.C. 0.068 $\mu$ F 50V F.C. 250K $\Omega$ X2 V.R., BALANCE 150K $\Omega$ X2 V.R., VOLUME 50K $\Omega$ X2 V.R., BASS 50K $\Omega$ X2 V.R., TREBLE
•LED nLD6 nLD7 nLD8 nLD9 oS4 oS5 oS6 oS7	48351800 48719200 48719200 48719200 48829700 48640700 48640600 48829600	GL-3HY8, TAPE/DAT AY3427S, SOURCE DIRECT AY3427S, SOURCE DIRECT AY3427S, SOURCE DIRECT Push SW., TAPE/DAT Push SW., SOURCE DIRECT Push SW., SUBSONIC• LOUDNESS Push SW., TONE

## 2-8. F-5714 SPEAKERS Switch Board

Parts No.	Stock No.	Description
$\Delta$ kR39 oS8	46624700 48829800	220 $\Omega$ 2W N.I.R. Push SW.,

## 2-9. F-5715 SPEAKERS Terminal Board

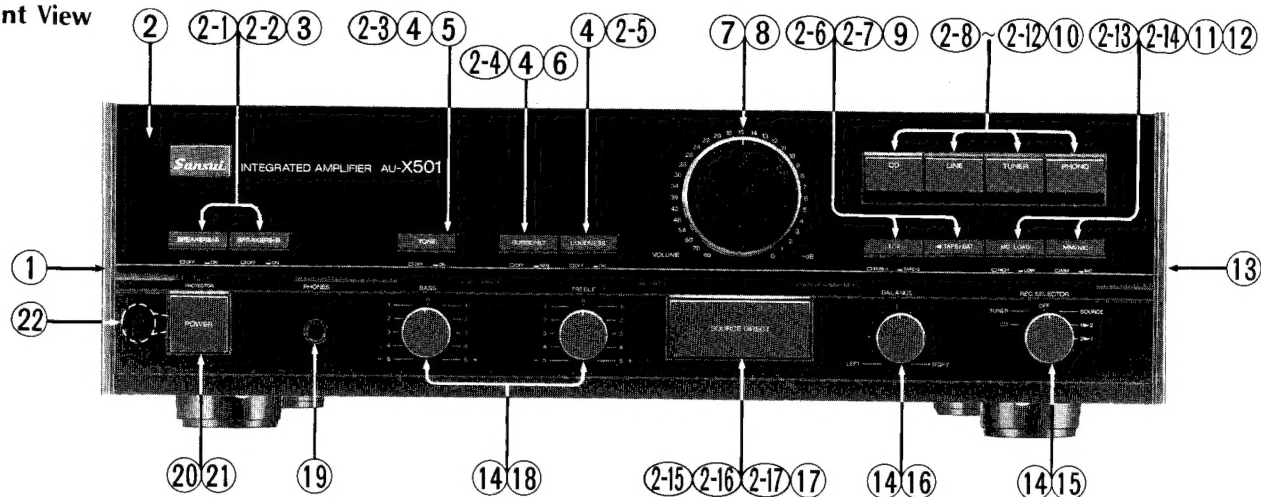
Parts No.	Stock No.	Description
$\Delta$ kR100 $\Delta$ kR101 kC100 kC101 oZ5	46907400 46907400 46697600 46697600 48569100	4.7 $\Omega$ 3W N.I.R. 4.7 $\Omega$ 3W N.I.R. 0.1 $\mu$ F 50V F.C. 0.1 $\mu$ F 50V F.C. 8P Terminal, Speaker

## 2-10. F-5709 Fuse Board

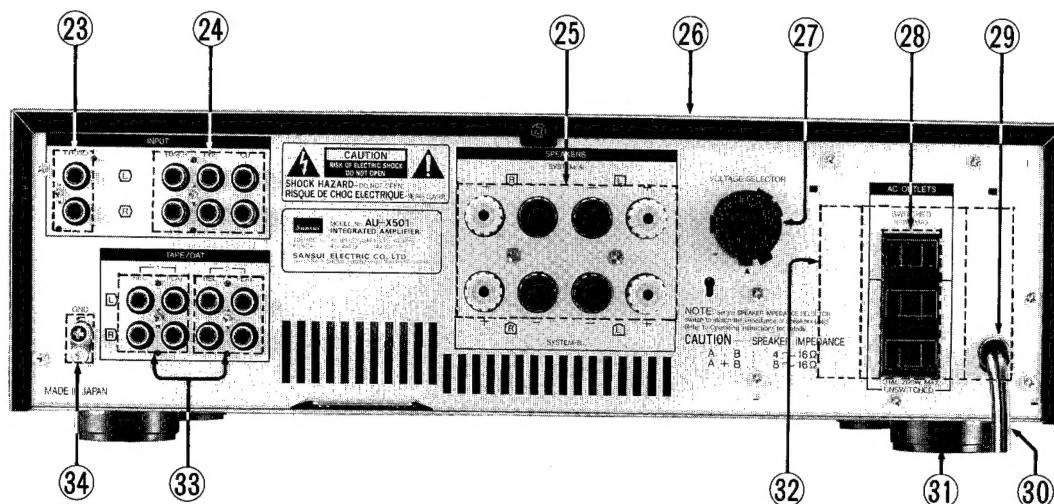
Parts No.	Stock No.	Description
$\Delta$ pF1 $\Delta$ $\Delta$ $\Delta$ pF2	48721700 48722100 07185300 48721700 07184700	Fuse 4.0A (XX•V•SS) Fuse 8.0A (UL•CSA) Fuse 4.0A (EU•UK•SEV) Fuse 4.0A (XX•V•SS) Fuse 1.0A (SEV)

### 3. OTHERS PARTS

#### • Front View



#### • Rear View



#### Parts List < Front View/Rear View >

Parts No.	Stock No.	Description
1	84523000	Left Side Panel
2	27395100	Front Panel Ass'y (XX-V•CSA•SS•EU•UK•SEV)
	27395200	Front Panel Ass'y (UL)
2-1	27416200	Knob, SPEAKERS-A
2-2	27416300	Knob, SPEAKERS-B
2-3	27416500	Knob, TONE
2-4	27416600	Knob, SUBSONIC
2-5	27416800	Knob, LOUDNESS
2-6	27415500	Knob, 1/2
2-7	27415700	Knob, TAPE/DAT
2-8	27416100	Knob, CD
2-9	27416000	Knob, LINE
2-10	27415900	Knob, TUNER
2-11	27415800	Knob, PHONO
2-12	27296900	Spring
2-13	27415600	Knob, MC LOAD
2-14	27417000	Knob MM/MC
2-15	27415300	Knob Plate, SOURCE DIRECT
2-16	27300100	Knob, Holder
2-17	27297000	Spring
3	48829800	Push SW, SPEAKERS
4	47348200	Jointer

Parts No.	Stock No.	Description
5	48829600	Push SW., TONE
6	48640600	Push SW., SUBSONIC•LOUDNESS
7	27383300	Knob, VOLUME
8	48829300	150kΩx2 V.R., VOLUME
9	48829700	Push SW., 1/2-TAPE/DAT
10	48640300	Push SW., PHONO•CD•TUNER•LINE
11	27394700	Joint Shaft Ass'y
12	48829200	Push SW., MM/MC/C LOAD
13	84523100	Right Side Panel
14	27101700	Knob, REC SELECTOR •BALANCE•BASS•TREBLE
15	48829900	Rotary Selector with flexible wire
16	48829400	250kΩ V.R., BALANCE
17	48640700	Push SW., SOURCE DIRECT
18	48829500	50kΩ V.R., BASS•TREBLE
19	46579600	Jack, Phones
20	27415400	Knob, Power
21	48866600	Push SW., Power
22	46425800	0.01μF 400V C.C.
	or 46943200	0.01μF 400V C.C.
23	48528400	2P Terminal, PHONO
24	48528600	6P Terminal, TUNER•LINE•CD

Parts No.	Stock No.	Description
25	48569100	8P Terminal, SPEAKERS
26	27383900	Bonnet (XX-V•UL•CSA•SS)
	27446900	Bonnet Ass'y (EU•UK•SEV)
△ 27	48175200	Plug, Voltage Selector (XX-V•SS)
△	07204700	Slide SW., Voltage Selector (EU•UK•SEV)
△ 28	46730400	AC OUTLET (XX-V•SS)
△	48184700	AC OUTLET (XX-V•UL•CSA)
△	46161000	AC OUTLET (EU•SEV)
△	46364800	AC OUTLET (UK)
29	39106000	Strain Relief (XX-V)
	39104900	Strain Relief (UL•CSA•SS•EU•UK•SEV)
△ 30	38004700	Power Supply Cord (XX-V)

Parts No.	Stock No.	Description
△	48187500	Power Supply Cord-polarized (XX-V)
△	48187800	Power Supply Cord (UL•CSA)
△	48837700	Power Supply Cord (SS)
△	46128900	Power Supply Cord (EU)
△	38004300	Power Supply Cord (UK)
△	48306700	Power Supply Cord (SEV)
31	47331100	Leg
△ 32	15029109	Power Transformer (XX-V•SS)
△	15029102	Power Transformer (UL•CSA)
△	15029105	Power Transformer (EU•UK•SEV)
33	48528500	4P Terminal, TAPE/DAT
34	48587600	Ground Terminal

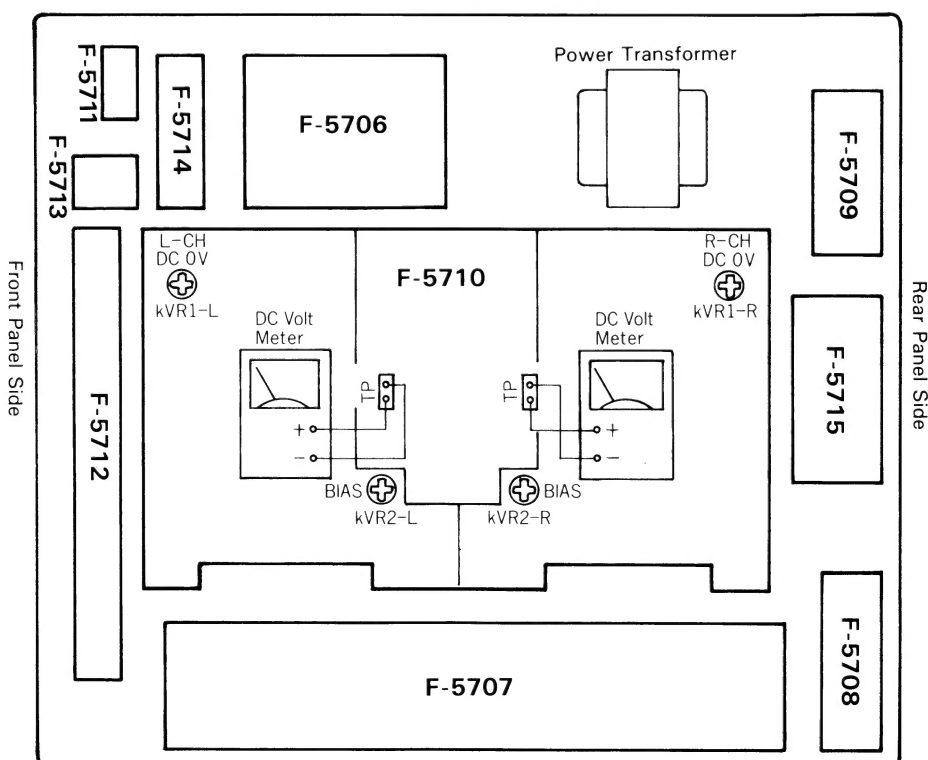
## 4. ADJUSTMENTS

**Note:** 1) Master Volume .... Minimum  
 2) Room Temperature .... 18°C ~ 28°C (65°F ~ 83°F)  
 3) For this adjustment, run the unit for more than 10

minutes after the power is switched ON.  
 4) Before turning ON power switch, set the kVR2 on F-5710 to center position.

STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	Center DC 0V Adj. <L-ch>	Speakers Terminal <L-ch> DC Volt Meter	kVR1 <L-ch> F-5710	DC 0 ± 5mV	•This bias value is converted from current value to voltage by ohms law.
2.	Center DC 0V Adj. <R-ch>	Speakers Terminal <R-ch> DC Volt Meter	kVR1 <R-ch> F-5710	DC 0 ± 5mV	
3.	Bias Current Adj. <L-ch>	Test Terminal (TP, L-ch), DC Volt Meter	kVR2 <L-ch> F-5710	DC 6.6 ± 3mV	
4.	Bias Current Adj. <R-ch>	Test Terminal (TP, R-ch), DC Volt Meter	kVR2 <R-ch> F-5710	DC 6.6 ± 3mV	

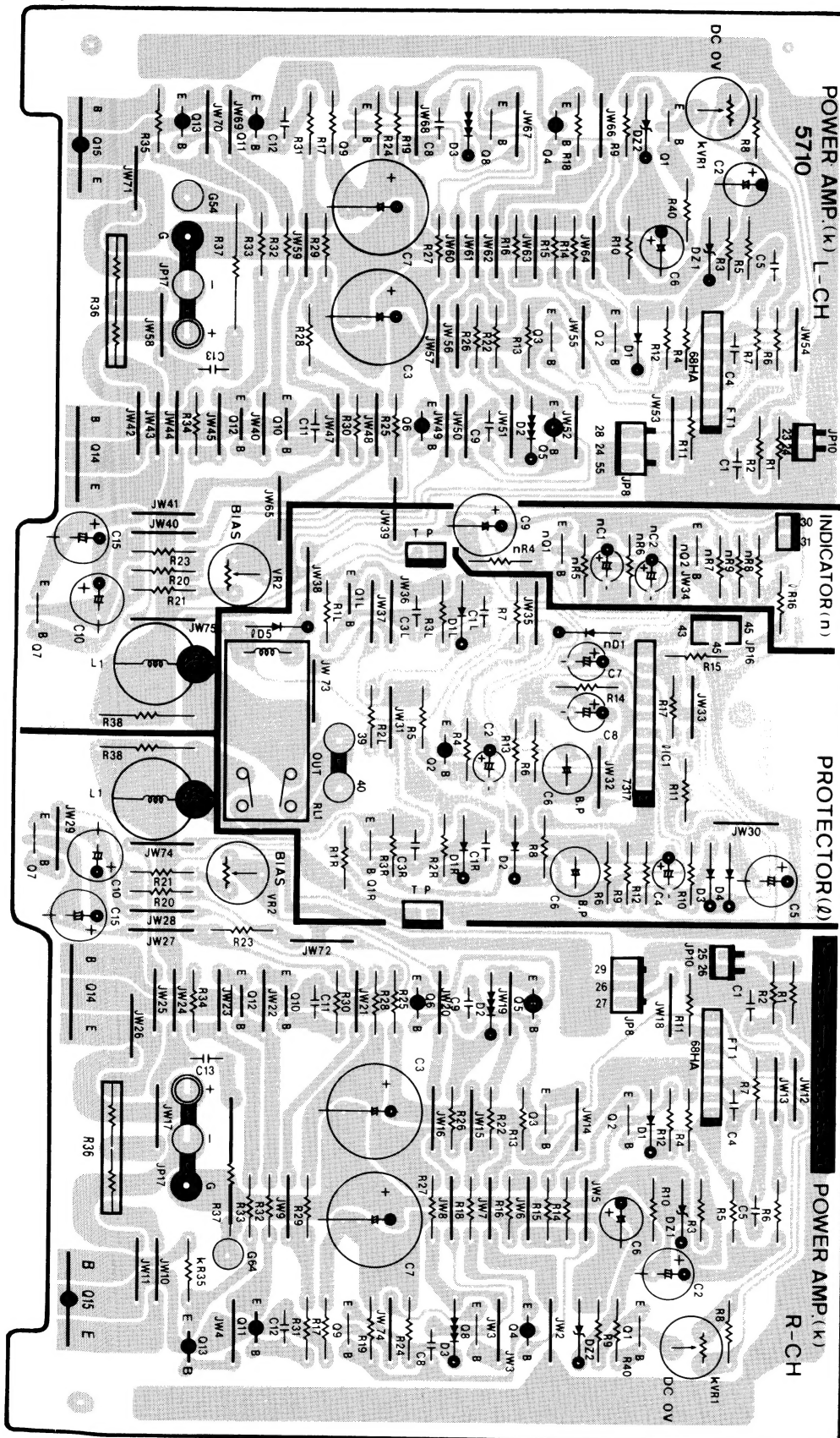
Fig. 4-1 Printed Circuit Boards Location and adjustment points.



## 5. PARTS LOCATION OF CIRCUIT BOARD

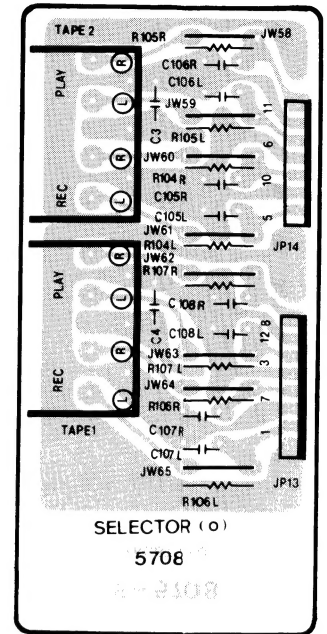
### 5-1. F-5710 Power Amp. Board

Component Side



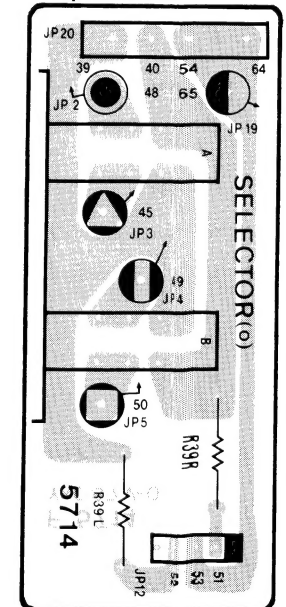
### 5-2. F-5708 TAPE/DAT Terminal Board

Component Side



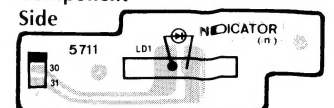
### 5-3. F-5714 SPEAKERS Switch Board

Component Side



### 5-4. F-5711 PROTECTOR Indicator Board

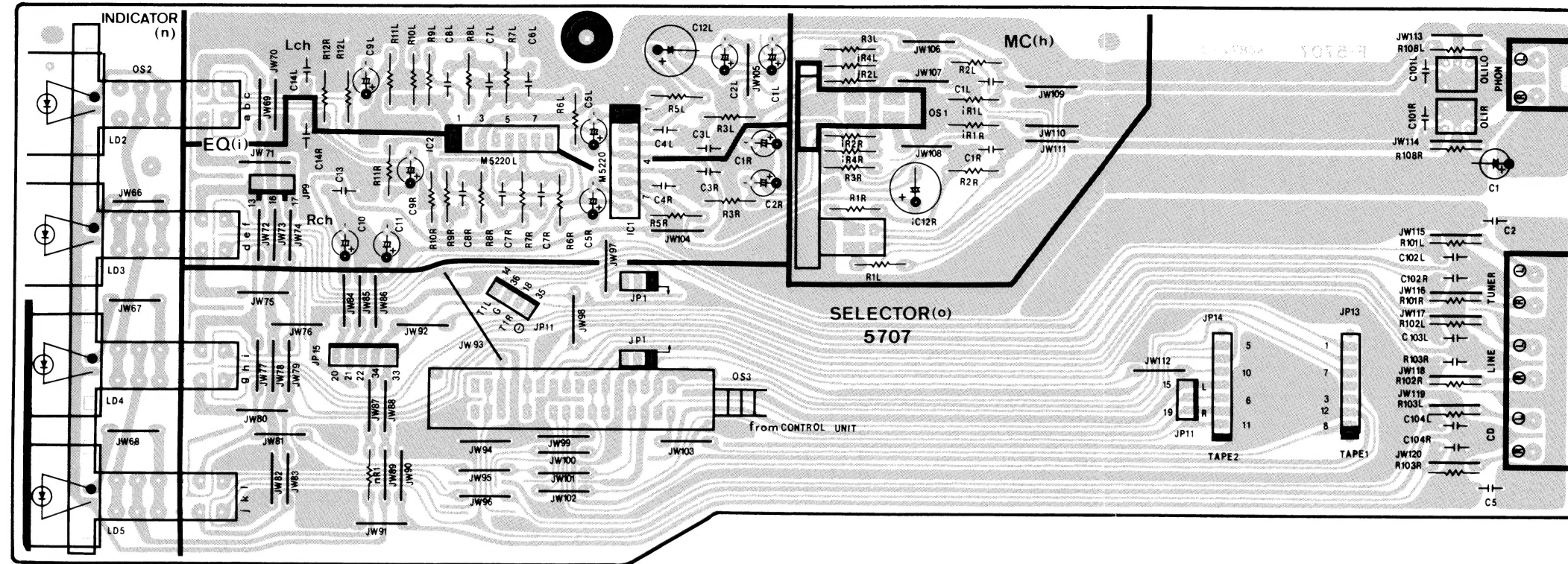
Component Side





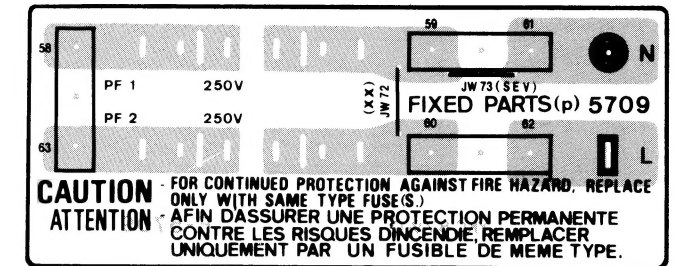
## 5-5. F-5707 Equalizer Amp. &amp; INPUT Terminal Board

Component Side



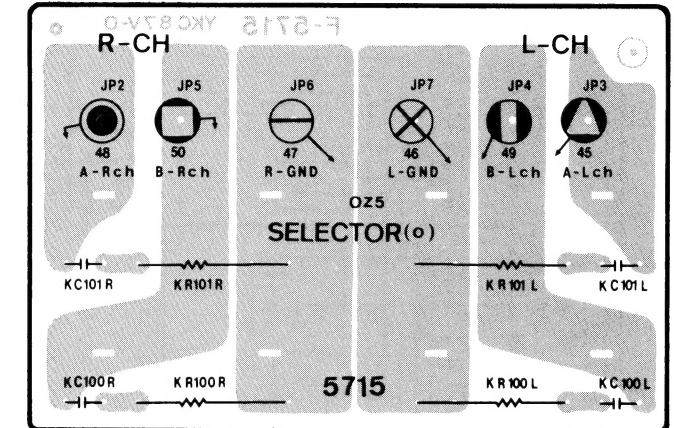
## 5-8. F-5709 Fuse Board

Component Side



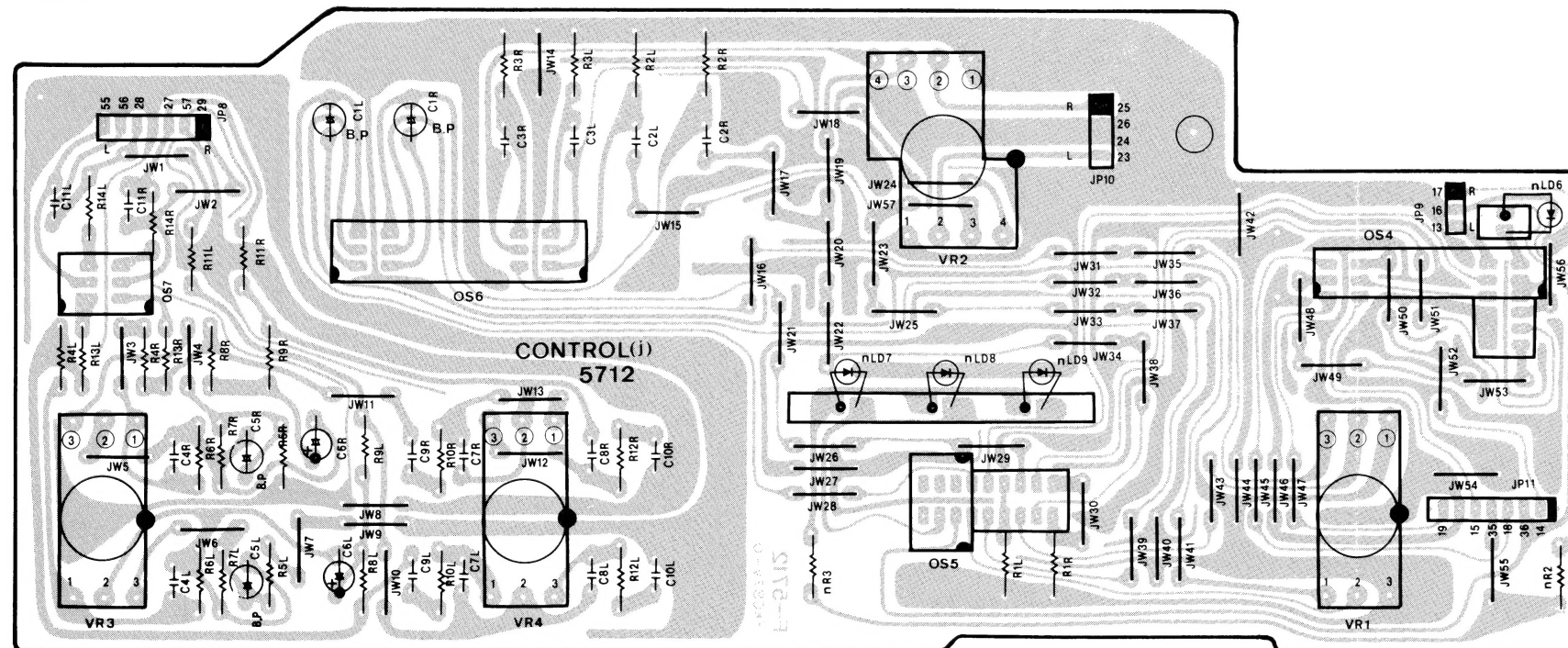
## 5-9. F-5715 Speakers Terminal Board

Component Side



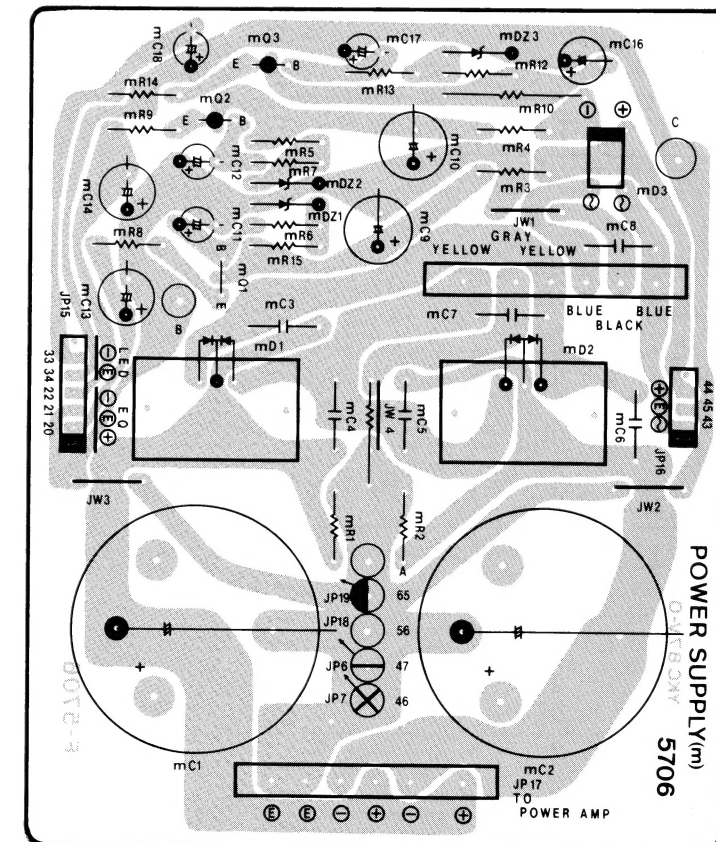
## 5-6. F-5712 Control Volume Board

Component Side



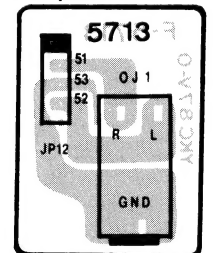
## 5-7. F-5706 POWER Supply Board

Component Side



## 5-10. F-5713 PHONES Jack Board

Component Side

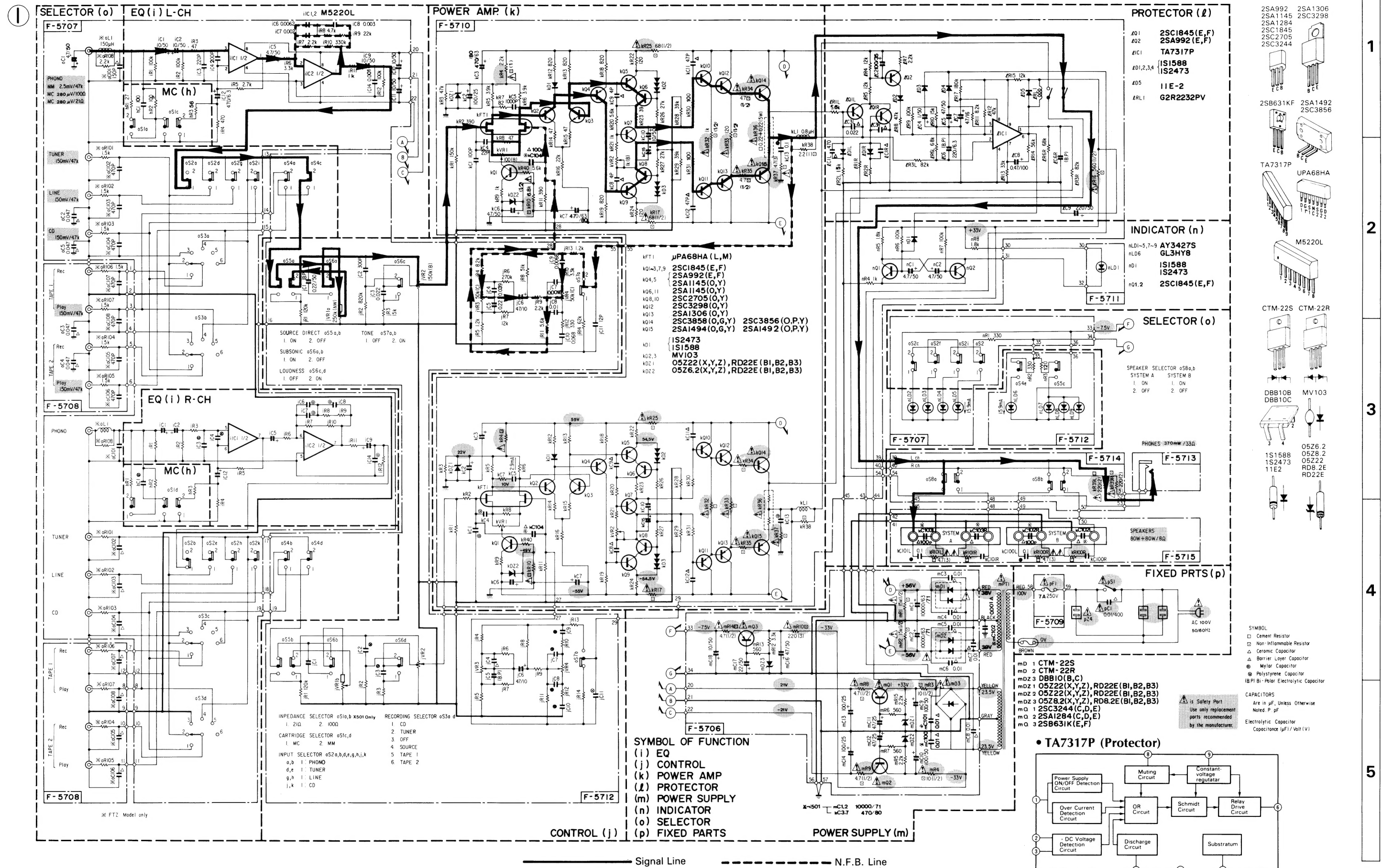




## 6. SCHEMATIC DIAGRAM

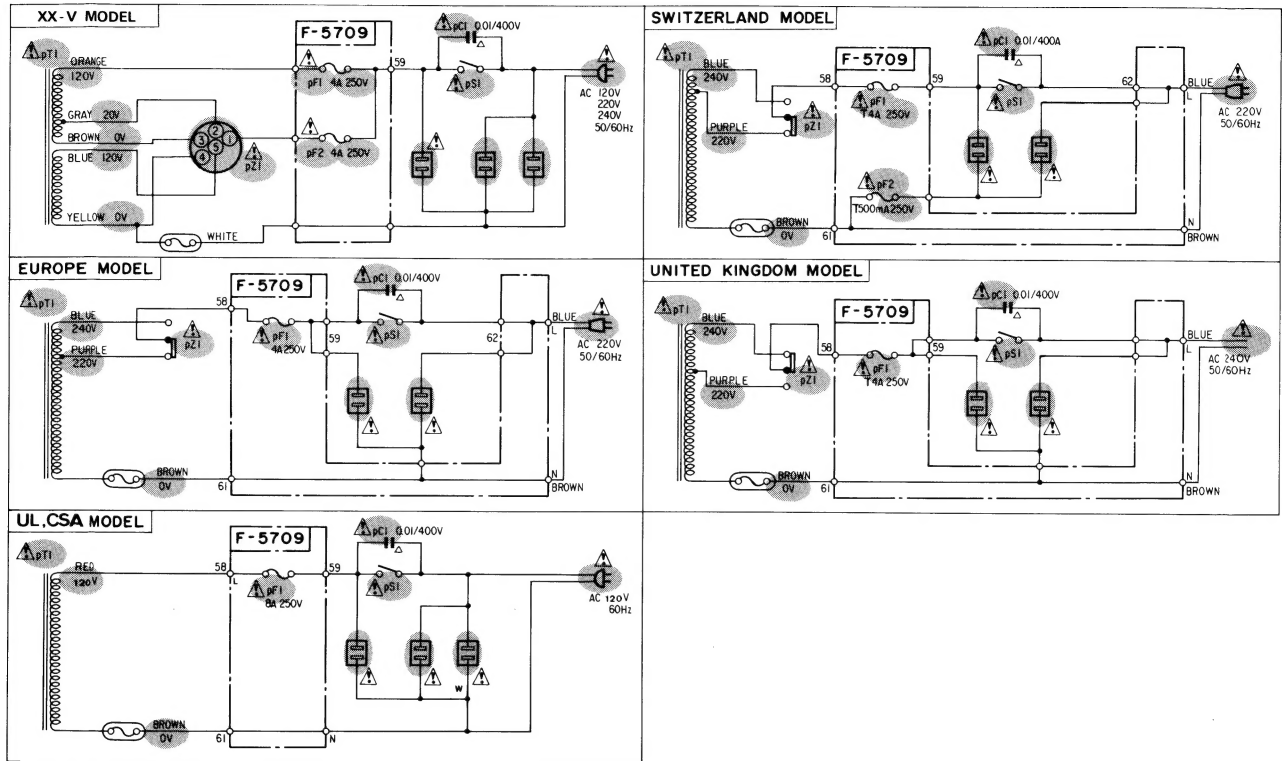
### 6-1. Main Section

- \* Design and specifications subject to change without notice for improvement.
- \* La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
- \* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



## 6-2. Power Supply Section (Primary Side)

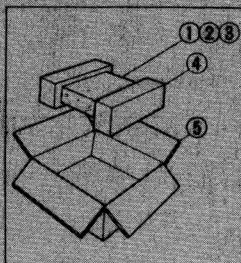
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## 7. PACKING LIST

Parts No.	Stock No.	Description
1	07868300	Polyethylene Sheet
2	27417500	Protector Paper
3	27306700	Vinyl Bag
4	27395300	Styrofoam Packing
5	27394800	Carton Case



## 8. ACCESSORY LIST

Stock No.	Description
49025500	Operating Instruction (E•F•S)
49025600	Operating Instruction (G•I•Sw)

**Note:**

**E•F•S:** English•French• and Spanish Version

**G•I•Sw:** German•Italian• and Swedish Version



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